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MONTANA MOTORCYCLE MANUAL



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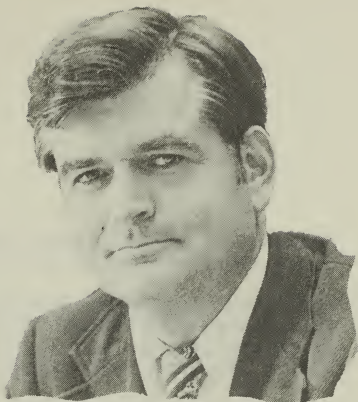


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STATE
OF
MONTANA
ATTORNEY GENERAL
MIKE GREELY

STATE CAPITOL, HELENA, MONTANA 59601 TELEPHONE (406) 449-2026

4 November, 1977



Dear Fellow Montanan,

Motorcycles are fun. They are energy efficient and convenient. But riding a motorcycle requires special skills and rules to ensure your own safety and that of others as well.

Driving any motor vehicle is serious business, but handling a motorcycle is especially serious because there's so little margin for error. A slight misjudgement on a bike can mean tragedy for you or someone else. You don't have tons of protective steel around you when you're motorcycling, or the benefit of four stabilizing wheels. Weather, wind, gravel and traffic are more serious considerations for you, the bike rider, than for drivers of cars and trucks.

This manual gives you the tools you need to operate your motorcycle safely and legally. Study it well. Learn the rules, use them, and stay in one piece.

Have a great time on your bike, and please drive gently.

With best wishes,

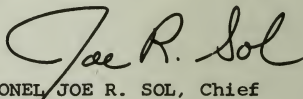
Mike Greely
MIKE GREELY
Attorney General

Montana has experienced a dramatic increase in motorcycle registration in the past seven years.

There were 17,000 motorcycles registered in 1968. This figure rose to 40,000 in 1974. The number of accidents, deaths and injuries has increased dramatically over the same period of time.

The appeal of the motorcycle to our youth has become a grave concern for those in traffic safety. The laws and regulations set down in this manual are intended to protect cyclists and others using our highways from disabling injuries and death.

I earnestly urge your cooperation and support in reviewing and complying with the laws in this manual.

A handwritten signature in dark ink, reading "Joe R. Sol". The signature is fluid and cursive, with the first name "Joe" being the most prominent part.

COLONEL JOE R. SOL, Chief
Highway Patrol Bureau

INTRODUCTION

The basic operational and legal rules for the safe operation of all motor vehicles are presented in the Drivers Manual. The purpose of this Motorcycle Supplemental Manual is to convey information particular to the safe operation of motor-driven cycles.

Throughout this supplement you will see multiple choice questions in boxes. In some instances, these multiple choice questions will be accompanied by visual aids to illustrate the situation being examined. These questions are the same type questions that you will find on the written portion of the driver license examination. The answers to the questions found in this manual are not specifically given, but they can be found by carefully reading the text following each question.

LEGAL PROCEDURES AND DRIVER RESPONSIBILITIES

This section is divided into two main parts, Motorcycle Drivers License and Accident Reporting.

MOTORCYCLE ENDORSEMENT

It is illegal for you to operate a motorscooter, motorcycle or any other motor-driven cycle on a public street or highway in Montana unless you have a Motorcycle Endorsement or a valid Montana Drivers License issued prior to January 1, 1976.

In order to obtain a Motorcycle Endorsement, the following requirements must be met:

- You must be at least sixteen (16) years of age or fifteen (15) years if you have passed a driver's education course approved by the Montana Highway Patrol and the Superintendent of Public Instruction.
- Have in possession a valid Montana License or another state's license.
- You must complete the motorcycle examination.
- You must pay the required fee of two dollars (\$2.00) for four (4) years, or a portion thereof.

There is an exception to this rule. You may secure a motorcycle instruction permit provided:

- You are fourteen and one-half (14½) years old, and
- You are enrolled in a Montana State Department of Education accredited driver's training class, and
- You are accompanied by or under the immediate supervision of an accredited driver education instructor.

If you fail to pass the driving test or choose to take it at a later date, you will be issued a Motorcycle Learner's License. This allows you to operate any motor-driven cycle while under the immediate supervision of a responsible licensed driver who has a valid license for motor-driven cycles. The fee for this instruction permit is the same as for a regular classified license. It is issued for six (6) months. If you fail to pass the motor-driven cycle driving test within the six (6) months, the permit will expire and you will forfeit the fee. To get a new permit you will have to pass the full examination and repay the fee.

The driver examination consists of five parts:

- Driving record review
- Physical aptitude review
- Vision test
- Written test
- Driving test

The written test consists of a test specifically geared for motorcycle drivers. The material necessary to pass the motorcycle test is covered in this supplement to the regular Driver License Manual. The questions on the motorcycle test are similar to those outlined throughout this supplement.

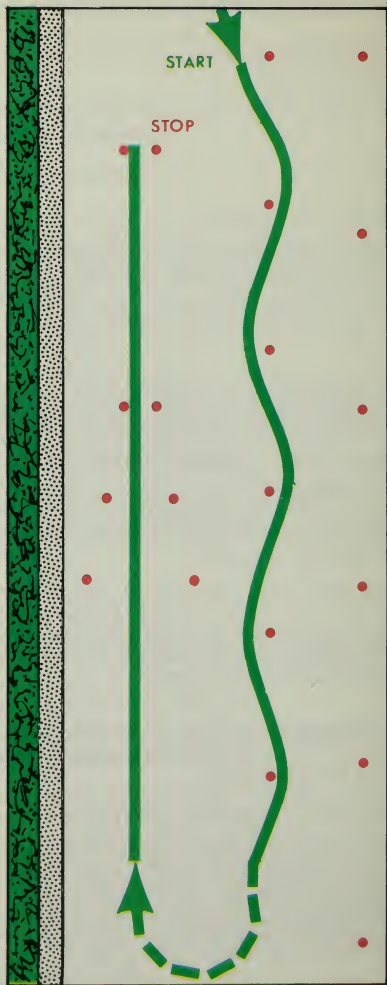
It should be noted that the motorcycle test is difficult. It has been designed to be comprehensive, and thus, difficult because the number of motorcycle-related accidents is increasing and most of these accidents involve new and inexperienced cyclists. Further, in most cases, the person who is injured or killed, regardless of fault, is the cyclist. Therefore, in order to contribute to safe motorcycle driving the examination has been designed to increase your motorcycle driving knowledge to particular driving situations you will encounter.

The driving test is an important part of the examination because it provides you with the opportunity to demonstrate your ability to drive safely. You must provide a properly registered vehicle to be used in the test. Make certain you are familiar with it.

In addition to demonstrating your knowledge about the motorcycle's equipment and controls, you may be asked to perform the following actions as illustrated on the following page:

Applicant drives the "Serpentine" going as slow as possible

Applicant may turn at far end by any method convenient, so long as control and balance are maintained. From a stop, opposite the last guard cone, Applicant drives a straight line through triangle and comes to a complete stop, with front wheel between two cones on near end. During the straight drive, applicant must shift from low to second and back to low using the clutch.



ACCIDENT REPORTING

If you are involved as a driver in an accident, you **MUST**:

1. Stop immediately.
2. Assist the injured if aid is needed or requested.
3. Exchange information with other person(s) involved.
4. Notify the local police immediately.
5. Report the accident to the Montana Highway Patrol.

For more detailed information concerning this, consult the Montana Drivers Manual.

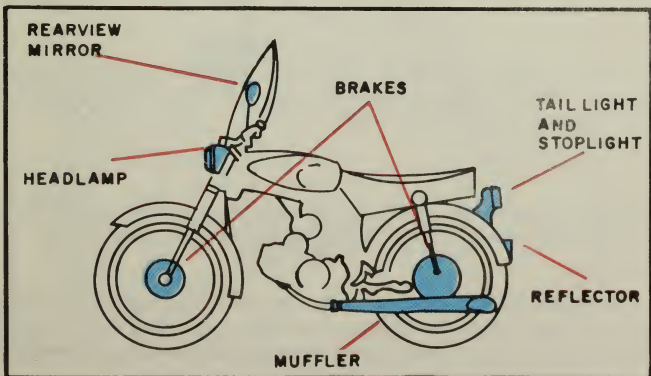
VEHICLE REGULATIONS AND SAFETY PROCEDURES

For the motorcyclist's safety, it is essential and required by law that he and any passenger riding with him wear certain protective equipment. This section shall deal with safety helmets and eye protection. In addition, recommendations will be made concerning suggested safety equipment and apparel to supplement the minimum required safety equipment.

YOUR VEHICLE

Required Equipment.

The equipment illustrated below should be working and in proper adjustment:



Details of the regulations regarding some of the above requirements follow:

- You must have at least 1 headlamp (but not more than two) that illuminates at least 500 feet, which must be illuminated at all times.
- Your tail light and reflector must be visible for at least 500 feet.
- The stop light must be visible 100 feet in normal sunlight.
- The rearview mirror must be located so that you have a clear view of the road for at least 200 feet to the rear.
- Your cycle must be equipped with at least one brake that can be operated by foot or hand.
- If your cycle is equipped with directional signals they must be operable.
- Your bike must have a muffler. There should be no modifications of your muffler that would increase the sound of your cycle. If you intend to ride in a National Park you must have a spark arrestor on your muffler.

In addition to the above-mentioned required equipment, the cycle should be equipped with:

- Footrests or pegs for passengers
- A horn audible for at least 200 feet
- A license plate light.

Registration.

Any motor vehicle owned by a Montana resident must not be parked or driven on a public street or highway unless it is properly registered in Montana and has Montana license plates.

HELMETS

Approximately three-fourths of the motorcycle deaths are due to head injuries. Wearing a good helmet is the best means of protection.

The law states:

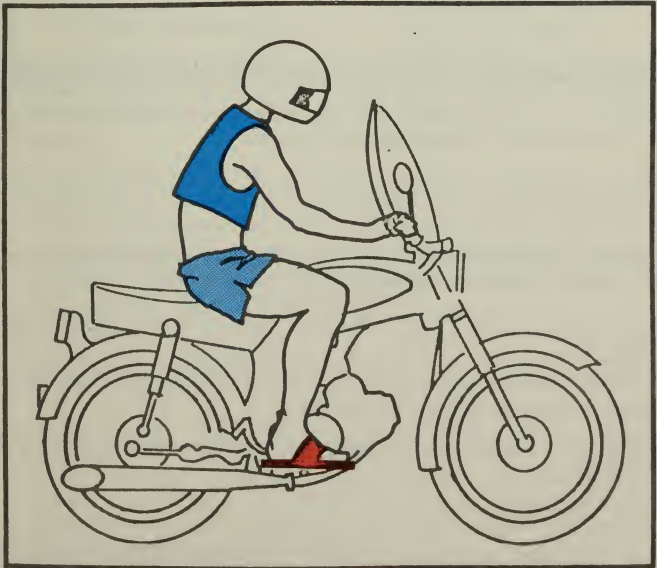
“ . . . The operator and passenger under 18 years of age of any motorcycle operated upon the streets or highways of this state shall wear protective headgear upon the head. Such headgear shall meet standards established by the department of justice.”

SUGGESTED EQUIPMENT

In addition to the required equipment, it is suggested the cyclist wear the following items:

1. Boots
2. Long pants
3. Heavy jacket
4. Eye protection

All of these items can further help minimize injury to the cyclist involved in an accident. The cyclist should be cautioned against wearing cutoffs (shorts) and sandals. These items provide little or no protection against cuts and bruises. Sandals in particular can become caught or stuck in the mechanism of the cycle. Finally, while more comfortable on hot days, the absence of a shirt or jacket affords no protection to the body and serious injury in an accident could occur without this protection.



ALWAYS WEAR LONG PANTS AND BOOTS

SAFE VEHICLE OPERATION

This section is divided into eight main parts:

1. Know Your Cycle
2. Speed
3. Right-of-Way
4. Lane Usage, Following and Passing
5. Turning
6. Parking
7. Operation with Other Passengers
8. Packages and Luggage

Each part contains a description of the safe driving practices related to that aspect of driving a motor-driven cycle. These safety practices are necessary for two main reasons: for the prevention of accidents and for the orderly movement of vehicles and pedestrians.

KNOW YOUR CYCLE

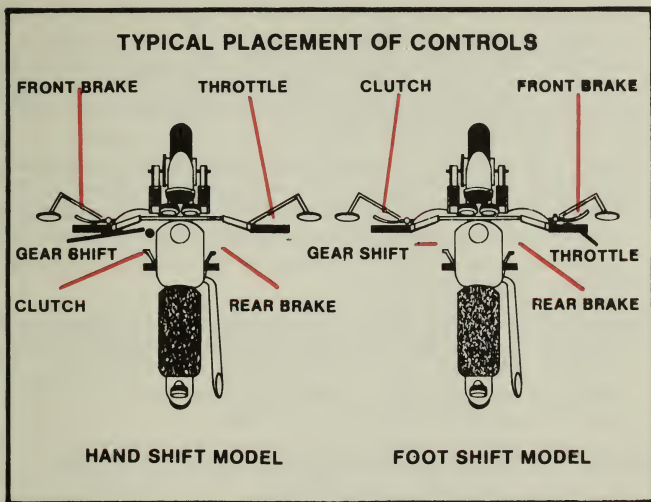
This part contains information regarding knowledge of cycle controls and the various methods of putting the cycle in motion.

You should study this section thoroughly until you understand the following:

1. Where the cycle controls are located, and the function of each.
2. How to put your cycle in motion.
3. Why it is necessary to check your brakes after you have first started.

Know the Controls.

It is extremely important that the motorcycle operator be familiar with the brakes, throttle, and other controls. You must be able to manipulate the controls by touch, without taking your eyes from the road.



The Controls.

- (1) **Front Brake Lever**—Front wheel brakes are applied by squeezing the hand lever (usually on the right) toward the handlebar. This lever operates the front wheel brake only. It has more stopping power, but usually should not be applied until after the rear brake is applied. Using the front brake only may cause the front wheel to lock so that you lose steering control.
- (2) **Throttle**—The throttle, which rotates like a loose rubber handlebar, is comparable to the accelerator of an automobile. The motorcycle accelerates when you turn the throttle toward you. When turned out, or away from you, the throttle reduces the cycle's speed. Some models of motorcycles have a spring that automatically turns the throttle out, reducing the motor's speed when you remove your hand. Don't grip the handlebar tightly with your wrist up, or a jolt could cause you to accidentally pull the throttle open. It's safest to rest your fingers on top of the handlebar with your wrist down.
- (3) **Clutch Lever**—The clutch lever is usually operated with the left hand. When squeezed toward the handlebar, the clutch disengages

the engine from the transmission. During the gear change, gradually release the clutch lever to the full "out" position. Some modern two-wheelers have the clutch built into the gear-shifting mechanism, which is usually operated by the left foot. On this type of cycle, the clutch is operated with the left foot and the gear shift is operated with the left hand.

- (4) Gear Shift Lever—Some motorcycle gear shifts are operated by the right foot, some by the left foot, and some by the left hand. For foot shift models, shifting gears is accomplished by pressing down on the lever or by placing the toes under it and pushing up. To shift gears, the lever is either depressed or lifted until it will move no further; then it is released.
- (5) Rear Brake Pedal—The rear brake pedal may be located on either the right or left side of the motorcycle. It is operated by applying pressure with the foot. It brakes the rear wheel only, and it activates the stop light on the back of the cycle. The rear brake should be applied before the front brake.

Which of the following is necessary for starting your motorcycle?

- ☐ A. Putting the cycle in neutral gear.
- ☐ B. Double clutching.
- ☐ C. Leaning the cycle toward the right.
- ☐ D. Setting throttle at low idle.

Before putting the cycle into motion you must be able to perform all of the following steps perfectly:

- A. Be sure the motorcycle is in neutral. The cycle should be in as near a vertical position as is possible.
- B. Start engine.
- C. Remove jiffy stand support.
- D. Squeeze clutch lever.
- E. Shift to first or low gear.
- F. Set throttle at fast idle.
- G. Slowly ease out clutch.
- H. Proceed in low gear.

Practice first going forward in low gear and then stopping. When this is done easily, practice going to first and second before stopping. Finally,

shift to first, second, and third before stopping. If you have not had previous experience riding a bicycle or other two-wheel vehicle, you will have to learn to balance and steer while operating in low gear. When the cycle starts to tilt in one direction, you should immediately turn the front wheel in the same direction to regain your balance. This practice should be done at low speeds and in an area free from other traffic, such as a parking lot. To keep from falling during the first lesson, it may be necessary to hold your feet off the foot pegs ready to catch the cycle in case it tends to fall to the right or left. Practice should be continued at slow speeds until you have complete control in balancing and-steering the cycle.

Checking the Brakes.

Immediately after starting the cycle, you should check the brakes to make certain they are working properly. Otherwise, you may find that you are without properly functioning brakes at a crucial time when you need them most.

CAUTION:

You should be aware of your center of gravity. Sit right above the foot pegs. Sitting forward or leaning back will, accordingly, shift your center of gravity.

SPEED

In a recent study, almost 20% of all motorcycle-involved accidents involved speeding violations. Most motorcycle-involved speeding accidents resulted in the death of the cyclist whether he was at fault or not. Most of the speeding fatalities were one-party accidents; that is, the cycle was the only vehicle involved.

As a rider without that envelope of steel protection afforded by a car, you should be particularly careful to adjust your speed to the law and existing conditions. A motorcycle has added problems after dark. A good rider will slow down an extra five miles per hour after dark. The best way to create a bad impression and take unnecessary risk is to exceed speed limits or to drive faster than the conditions warrant.

RIGHT-OF-WAY

This section contains information regarding courses of action for the cyclist at intersections.

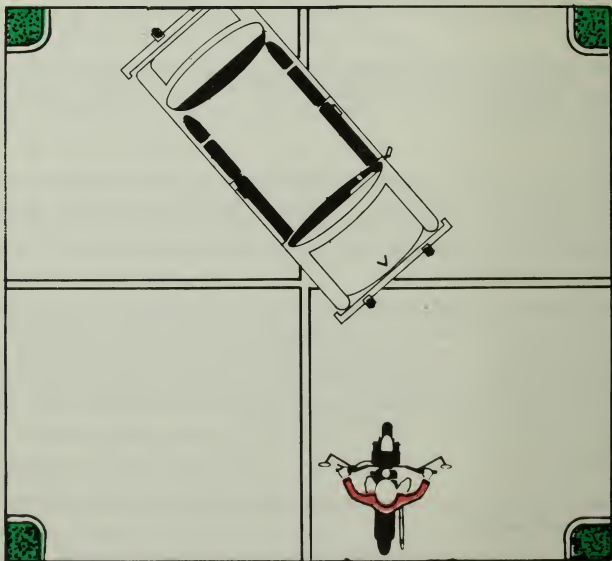
You should study this section until you understand the following:

1. How to approach and proceed through an intersection.
2. How to make yourself more visible to other drivers at intersections.

Most right-of-way accidents occur due to the other vehicle turning left in front of the motorcycle. To prevent this, the cyclist should:

- ☐ A. Proceed to the middle of the intersection slowly.
- ☐ B. Accelerate through the intersection.
- ☐ C. Move to the right wheel track.
- ☐ D. Be prepared to stop at crosswalk; proceed when the way is clear.

Many motorcycle-involved accidents are due to right-of-way violations. The majority of these right-of-way accidents were due to another vehicle turning left in front of the motorcycle because the other motorist did not see the cyclist. To minimize this possibility, the cyclist, when approaching and proceeding through intersections, should reduce speed and be prepared to stop prior to the intersection and proceed with care through the intersection.



CAUTION:

Whenever in doubt about the right-of-way, yield to the other motor vehicle.

LANE USAGE, FOLLOWING AND PASSING

Lane Usage.

Proper lane position is one of the most important concepts for the cyclist to be familiar with.

In this section you will learn about:

1. The proper lane position when riding alone and in groups.
2. Under what circumstances you should ride in the right portion of the lane.
3. Various tips concerning lane usage.

Proper Lane Positioning.

Lane position will depend often on environmental as well as road conditions. The safe cyclist when riding alone will adjust according to the situation.

However, these are some general tips concerning lane position you should consider:

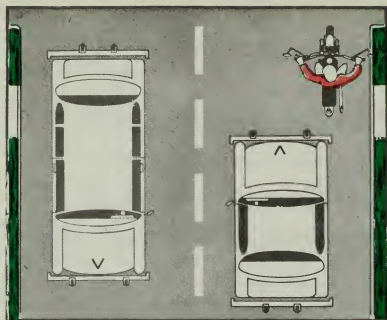
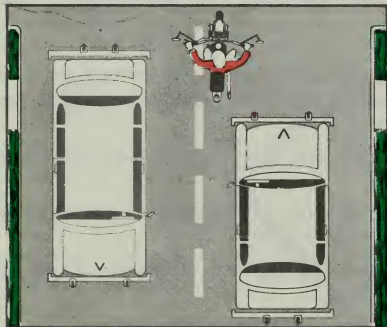
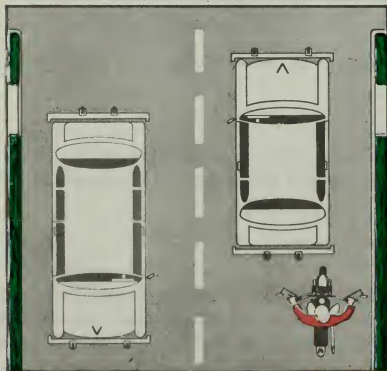
1. Consider your cycle to need the same buffer zone or area of space around your vehicle as a passenger vehicle.
2. You should be aware of potentially adverse situations caused by riding in the right wheel track:
 - a. Pedestrians may step out from between parked cars.
 - b. Drivers may open their car doors without seeing you.
 - c. Drivers may try to squeeze by you and through your buffer zone.

CAUTION:

Obstacles, as well as grease, oil, etc., tend to accumulate in the center of the lane. This is a particular hazard of riding in the center of the lane.

Proper Lane Changing.

Prior to changing lanes, always glance over your shoulder, as well as in your rear-view mirror. Be particularly cautious of vehicles traveling in your “blind spots”—slightly behind and to your side. You cannot see these cars in your mirror.



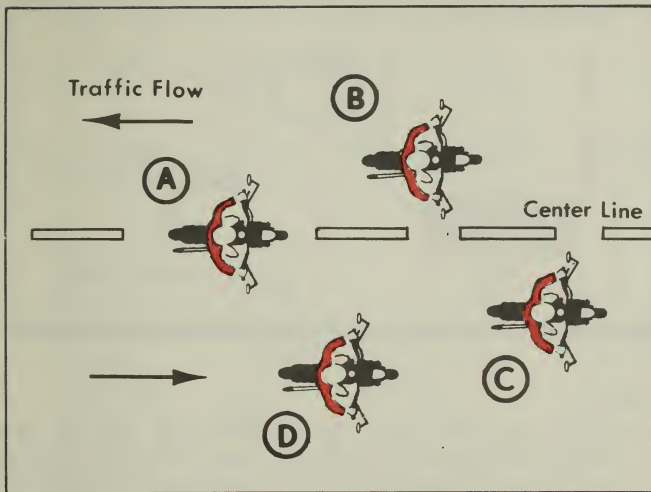
When at an intersection, you should position yourself:

☐ A. #1

☐ B. #2

☐ C. #3

☐ D. None of the above



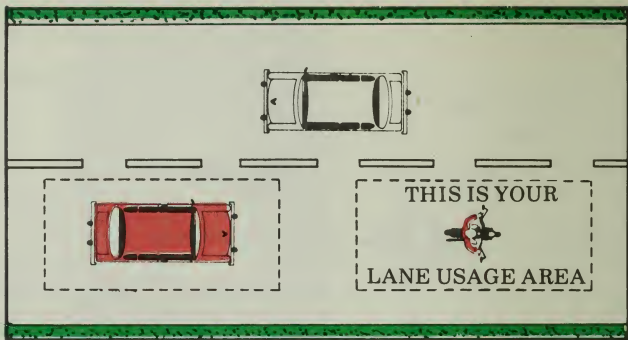
What is the proper lane position for a motorcycle under normal conditions on a two lane highway?

- | | |
|-----------------------------|-----------------------------|
| <input type="checkbox"/> A. | <input type="checkbox"/> C. |
| <input type="checkbox"/> B. | <input type="checkbox"/> D. |

Motorists are not looking for cyclists. As a result, most accidents occur at intersections. The very size of the cycle relative to other motor vehicles makes it more difficult for the cyclist to be seen.

The following are “tips” to help you be more visible at or near intersections:

1. Drive in the left wheel track of your lane, positioning yourself behind, not alongside, other vehicles. (The “wheel track” is the position on the road which corresponds to the path of the wheels of a car ahead; the path of the wheels on the left side is the “left wheel track.”)
2. Wear brightly colored clothing to make yourself more visible.
3. Montana Law requires that you display a white light on the front of your motorcycle at all times.



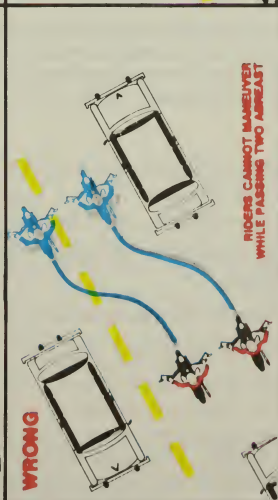
Other tips:

- a. Avoid excessive lane changing—because of the greater maneuverability of the motorcycle, many operators are tempted to increase the frequency of lane changing. You should realize that excessive lane changing can be very hazardous.
- b. Don't ride on painted stripes. They are slippery and afford little traction. They also attract moisture when the temperature changes.
- c. Don't ride on the shoulder of the road.
- d. Do not ride between the lanes.

With two or more motorcycles together, a safe way to travel is:

- ☐ A. Three abreast.
- ☐ B. Two in front and one behind.
- ☐ C. Single File.
- ☐ D. One in front and two behind.

When riding in groups, the best lane usage is either a staggered formation or single file. Riding side by side in a single lane reduces maneuverability of both motorcycles.



If you are traveling with one other rider, the rider on the right should stay just to the rear of the rider on the left. In this way, if either rider has to swerve to avoid some obstacle in the road, there will be a reduced chance of colliding with the other rider. Also, if emergency stops are required you will want as wide a lane as possible because of the possibility of your rear wheel sliding sideways.

When more than two cyclists are in a group, they should ride in staggered pairs. If there is a large group of riders traveling together, they should break up into smaller groups of four or five. Long "packs" of motorcycles are most difficult for other motorists to pass safely. This also helps the last rider, who might have difficulty keeping up with a large group. If several small groups are formed, they should keep well enough apart to allow other vehicles to pass each small group separately. This may be as much as several minutes between groups.

In a large group, the lead rider should be the most experienced cycle operator. He has the responsibility of watching for changes in road and traffic conditions and signaling the other riders. The lead rider should signal first for all maneuvers such as lane changes, passing, turning, stopping, or slowing down. There are other signals which you as an individual rider may use to let the other riders know you are leaving the group or that there is danger on the road.

Signals should be passed up to the front or back to the rear by each rider. You should remember not to crowd other cyclists in the group. You should also watch for movements, speed changes, and signals from the rider ahead and behind.

Following.

Rear-end collisions are a major contributing factor to motorcycle-involved accidents.

In this section you will learn about:

1. Proper stopping, braking and reaction distances under different conditions.
2. How to brake under normal and emergency conditions.
3. When to brake in a turn.

A recent study showed that 11% of all motorcycle-involved accidents were due to rear-end collisions. This high incidence of rear-ending collisions, for the most part, was due to the superior performance of motorcycle brakes, and to the failure of the vehicles involved to adjust their following distances to compensate for this. That is, a cycle can stop much more quickly than the vehicle behind it.

Stopping Distances.

In most cases total amount of distance needed for safe stopping is a combination of two factors: braking distance and reaction distance.

Braking Distance.

The two second rule is a technique of setting the proper braking distance.

The two second rule is applied in the following manner:

1. Select a fixed object on or by the road side (example: road signs, telephone poles, tire marks, dash marks, etc.)

CAUTION:

Do not choose an object that forces your eyes away from the driving scene.

2. As vehicle in front passes the fixed object, begin counting for an interval of 2 seconds (saying the words "one thousand one, one thousand two" represents approximately 2 seconds).
3. If you are able to count 2 seconds before your motorcycle passes the fixed object, you have generally allowed enough distance for an emergency stop.

It is recommended that the time interval be increased to 3 or 4 seconds during adverse weather or for bad road conditions. Don't be overconfident at lower speeds because of possible braking advantages that motorcycles have over cars. Remember, the vehicle behind you cannot stop as quickly.

Reaction Distance.

Stopping distance is not merely the braking distance for your vehicle to come to a stop, but also the time it takes to think and react prior to initiating the action of braking. The latter is called reaction time. How much time you will need prior to initiating the braking decision will depend upon your familiarity with the situation at hand, age, physical condition, etc. The more familiar you are with a particular kind of situation the less reaction time is needed. The minimum amount of time needed for "reaction time" is $\frac{1}{2}$ second. This is for anticipated simple situations under ideal conditions. A more practical minimum reaction time is for $\frac{3}{4}$ to 1 second.

Seven Conditions Affecting Stopping Distance.

1. How fast you are going. Your stopping distance on dry roads is affected by the speed at which you are traveling. You should remember that stopping distance increases with speed, and the increases are at increasing rates.

2. If you are traveling downhill, the force of gravity will act to increase your stopping distance.
3. If you are traveling uphill, the force of gravity will act to decrease your stopping distance.
4. Bad weather and poor road conditions may increase stopping distances.
5. Poor tire tread will increase your stopping distance since there is less gripping power.
6. Poor brakes will obviously increase your stopping distance.
7. Your alertness, reaction time, and ability to judge distances also will affect stopping distance.

Braking.

Most cycles have both a front and rear brake. Combined front and rear braking produces the safest stop. In most instances, you should apply your rear brake first and then feather (squeeze with two fingers) the front brake lightly. Use of the front brake exclusively may cause you to be thrown from your cycle. It is also helpful to downshift and use the gears to assist you in braking. Finally, try to keep your cycle in as upright a position as possible. This gives you greater amount of tread in contact with the road to insure a quicker and more stable stop.

When turning under normal road conditions, you should:

- ☐ A. Brake prior to making the turn.
- ☐ B. Brake while in the turn.
- ☐ C. Brake prior to turning.
- ☐ D. Brake while in the turn where the traction is greatest.

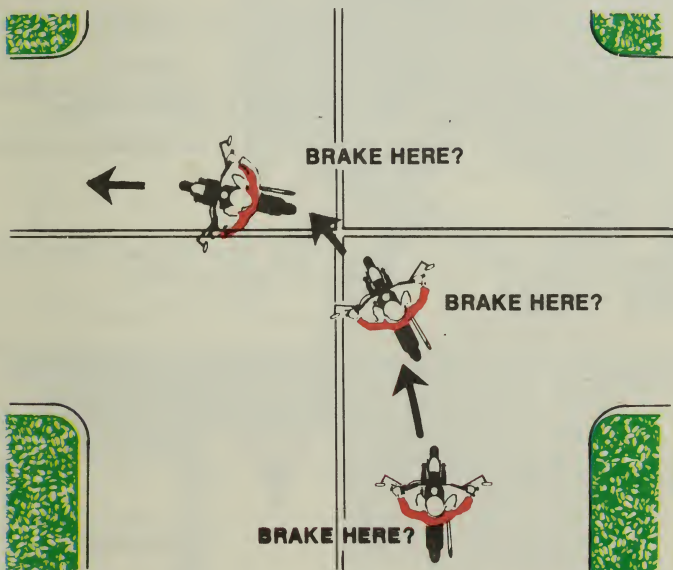
Fast Stop.

Situations will arise when you must stop rapidly but not make an emergency stop.

To make a "fast stop":

1. Firmly apply rear brake
2. Simultaneously apply the front brake.
3. Close throttle.
4. Sit square on the seat of the motorcycle.

The proper application of brakes in the turning procedure can be the difference between a safe turn and a spill. Always brake prior to the turn, not while in the turn.



PASSING.

In this section you will learn about:

1. The correct procedures for passing when riding solo and in groups.
2. Errors to avoid when passing.

The same restrictions concerning passing for passenger cars apply to cycles. You can only pass when you are legally permitted. For general information concerning passing, consult the Basic Manual for Drivers.

There are some significant differences in the operational procedures for passing that the solo operator and the operator in the group should know:

Solo Passing Procedures.

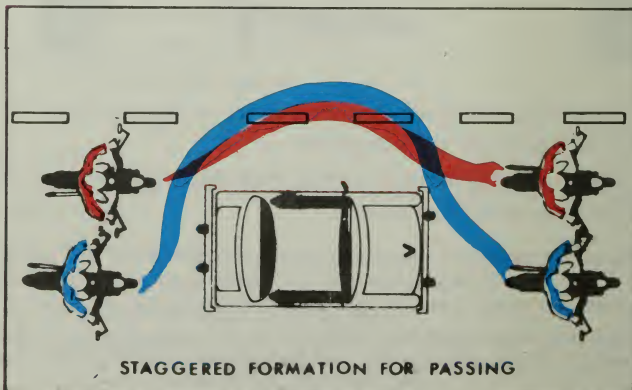
1. When ready to overtake the vehicle ahead, check traffic to make sure no one is planning to overtake you. Check over your shoulder as a double check. Do not solely depend on your rear view mirrors as you may not see a car in your blind spot.
2. Be sure that there is ample space ahead before pulling out into the other lane.
3. When all is clear, signal and pull into the left lane, leaving ample space between your cycle and the vehicle you are overtaking.
4. As soon as you can see the overtaken car in your mirror, return to the right hand lane.

CAUTION:

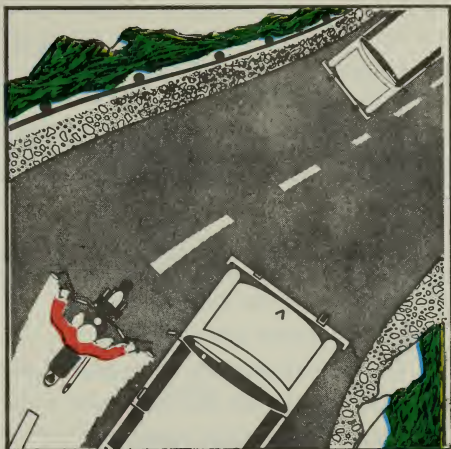
Always be extra alert for vehicles coming off of sideroads which may turn into your path as you overtake the slower vehicle.

Group Passing Procedures.

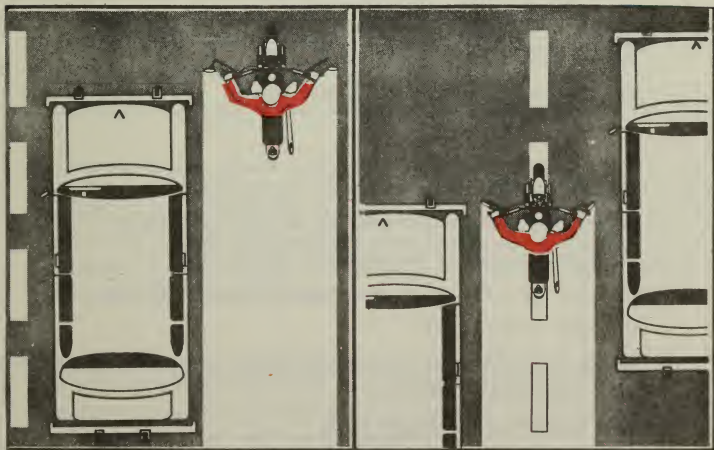
1. The rider closest to the passing lane should check traffic, signal and begin to pass when clear.
2. After completing the pass, the first rider should move back into his lane position. He should not ride too far until the group is together.
3. After checking traffic, the second rider should follow the same passing procedures.



**AVOID
THESE
PASSING
ERRORS**



PASSING ON CURVE OR HILL



PASSING ON RIGHT

RIDING BETWEEN LANES

Passing on a Curve or Hill—The cyclist must be even more cautious than a passenger car driver about passing near a hill or curve because you not only must be certain there is no oncoming traffic, but you must have

knowledge of the road surface of the entire passing area. On a curve or hill, the cyclist should not pass where he cannot see oncoming traffic.

Passing on the Right—Do not pass on the right side of cars, as the car may swerve or make an unsignaled right turn.

Riding Between Lanes—Never ride between two lanes of cars. This is not only a dangerous action in itself, but it is asking for an accident. One of the cars could swerve or make an unsignaled turn.

TURNING

A common failing of many cyclists is the failure to turn correctly. Frequently they turn into the wrong lane, forget to signal or fail to adjust to the conditions of the turn.

From this section you will learn:

1. How to turn properly under normal conditions.
2. How to make left and right turns at intersections.
3. How to turn at high speed.
4. How to make turns at moderate speeds.
5. How to negotiate turns on gravel and sandy surfaces.
6. How to turn with a passenger aboard.
7. How to turn on curves or country roads.

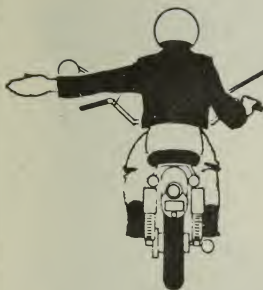
Turning Under Normal Conditions.

When turning a corner on a motorcycle, a good practice is to:

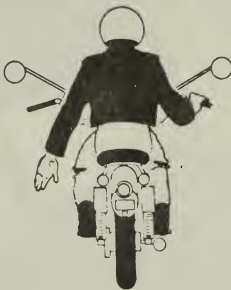
- ☐ A. Maintain an upright position of body and cycle.
- ☐ B. Lean the body in the direction of the turn.
- ☐ C. Lean the body away from the direction of the turn.
- ☐ D. None of the above.

1. Signal—the hand signal for a turn must be given at least 100 feet before the start of the turn.
2. Start turn from the proper lane:
 - left turns should be made from a position to the right of the center line (left wheel track).
 - right turns should be made from the extreme right side of the right lane (right wheel track).

HAND SIGNALS



Left turn



Stopping



Right turn

CAUTION:

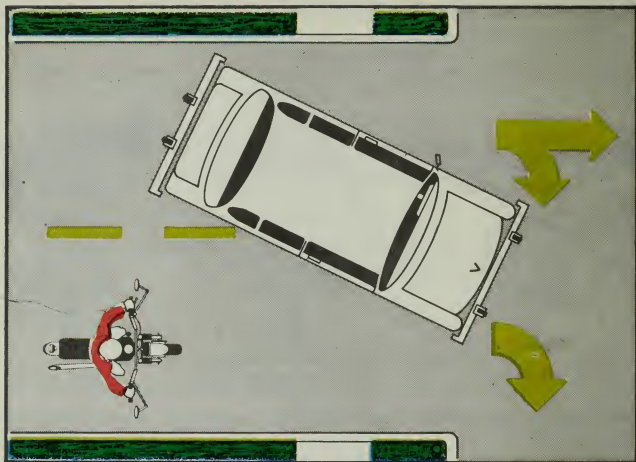
Watch for a car on your left that may also be making a right turn and crowd you against the curb.

A particular instance of this hazard is illustrated on following page.

3. Turning in the correct path—the actual turning of a corner on a motorcycle is done much the same as on a bicycle. There is little steering of the handlebars except at very low speeds. Instead, the curve is rounded by downward pressure on either handlebar and a shifting of body weight by leaning in the direction of the curve to overcome centrifugal force.

For example: When rounding a corner to the right, apply pressure to the right handlebar and shift your weight to the right hip. As speed and sharpness of the curve become greater, the amount of pressure on the handlebars and shift must increase.

Slow down before entering the turn and keep a steady speed while in the turn. When leaving the turn, you should speed up.



An automobile cuts or moves into the "right only" position. The cyclist has frequently been changing lanes and therefore, the motorist does not see him and an accident is likely to occur.

Turning at Intersections.

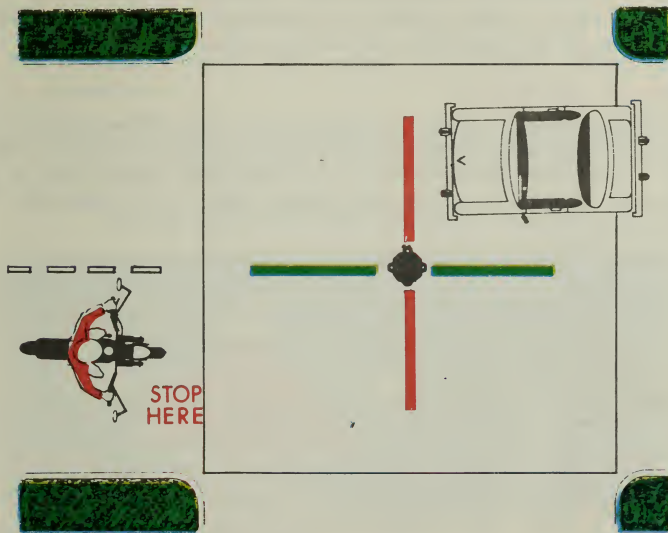
In making turns at intersections, the procedures are somewhat different for the cyclist than for the motorist.

Left turn at intersection.

1. Check traffic in left-hand lane.
2. Signal (hand signals can be seen more readily.)
3. Move to proper lane and proper lane position.
4. Reduce speed—apply rear brake first for stability (also, the rear brake actuates the brake light).
5. Look ahead for unusual road hazards, pedestrians, etc.
6. When oncoming traffic is clear, proceed to the middle of the intersection and turn into proper lane position.

When turning left under a green traffic light, stop at the crosswalk until oncoming traffic is clear. Otherwise, you may get "hung up" in the middle of the traffic when the light turns red. When turning left where

there is no traffic sign or signal, always be prepared to stop at the crosswalk; proceed only when the way is clear.



Right turn at intersection.

1. Check traffic in right-hand lane.
2. Signal.
3. Move into proper lane position.
4. Look ahead for:
 - a. Pedestrians.
 - b. Cars which could turn in front of you from your left.
 - c. Unusual road hazards.
 - d. Parked cars.
5. Never turn inside the turning arc of a car turning right in front of you.
6. Do not pass cars on the right.

7. Swing wide enough to avoid hitting the curb with your foot rest.

Under all conditions, you must yield to pedestrians.

In all cases of going through an intersection, reduce speed, proceed slowly through the crosswalk, and accelerate when the way is clear.

Turning at High Speeds.

At high speeds, turning the motorcycle is very different than from turning at lower speeds. Lean the motorcycle and your body at the same angle. Your body should be in the same plane or line as that of the motorcycle. It should be at the same angle as that of the motorcycle. The motorcycle will tend to naturally follow the turn of the arc.

There are two possible conditions that may hinder your turn:

- A. You may not be leaning sufficiently toward the inside of the curve. In this case, you can run off the roadway on the outside of the curve. To correct this, you must lean the motorcycle and your body over further or reduce speed.
- B. Another difficulty is over-leaning. If you lean too much as you go into a curve, you can run off the roadway on the inside of the curve. To correct this, straighten up the cycle so that you are leaning at the correct angle, or increase the speed for the angle at which you are leaning. The latter should be done with extreme caution.

Radii of some curves change as you progress through them. These radius changes may be quite abrupt, and you must compensate for these differences.

- A. Always enter curves at a safe speed. This means slowing before entering the curve.
- B. Begin to accelerate as you proceed through the curve.
- C. Continue acceleration as you approach the end of the curve.
- D. Do not lock front or rear wheels while riding through any curve, except to avoid an accident.

Sharp Turns at Moderate Speed.

When making a sharp turn at moderate speed, you should:

- ☐ A. Lean the motorcycle over further than your body.
- ☐ B. Lean your motorcycle and your body at the same angle.
- ☐ C. Lean your body over further than the motorcycle.

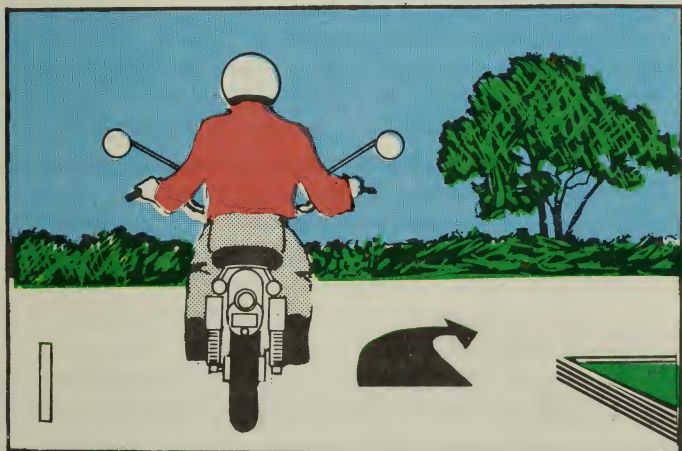
- D. Sit squarely in the seat and slightly forward.

It is frequently necessary to make sharp turns at moderate speeds.

To do this:

- A. Maintain a speed high enough so you have control of your motorcycle.
- B. Lean the motorcycle over further than your body. Your body weight will maintain the motorcycle in an upright position. As the motorcycle leans, it will curve a natural turning arc.

Centrifugal force helps maintain the motorcycle at the proper angle.



NOTE:

Many cyclists have found it helpful to slightly steer in the opposite direction (counter steer) prior to making this type of turn.

Turns on Gravel and Sandy Surfaces.

Avoid sharp turns on these surfaces because of the increased possibility of sliding and falling due to loss of road grip. Reduce speed before going into the turn, and begin gradually to increase speed about a quarter of the way through the turn. Be careful not to spin the rear wheel.

Turning with Passengers Aboard.

Passengers should lean the same as the rider in turns. If your passenger is not experienced, you should instruct him before you start on the ride.

OPERATION WITH PASSENGERS

The beginning cyclist should not attempt to carry passengers. Operating the cycle with a passenger represents an increase in weight and makes it more difficult to keep the cycle upright and properly balanced.

If you do carry a passenger, your cycle must be equipped with a rear seat or sidecar and separate footrests for the passenger. He should never ride "sidesaddle" or in front of you.

Your passenger should be instructed to:

1. Hold onto the handle, seat strap, or whatever means is provided while the motorcycle is in motion.
2. Keep his feet on the passenger's footpegs at all times.
3. Avoid tensing his body, especially when turning, because this makes the cycle difficult to corner.
4. Lean in the same direction as the operator.
5. Avoid contact with the hot muffler. (The screaming and bad language often upsets the driver.)

PACKAGES AND LUGGAGE

The only place packages or luggage can be carried on a motorcycle is in a carrier provided on the cycle. Make sure that the luggage or packages are firmly fastened down and secured. This means everything should be behind you so nothing can interfere with your freedom to control your machine. At no time should you carry packages or articles in your hands, arms or between your legs.

ADVERSE DRIVING CONDITIONS AND SITUATIONS

In order to drive your cycle safely, you must know how to apply the driving practices discussed in the preceding section. Also, you must be able to handle certain situations as you encounter them on the road. This portion of the supplement is devoted to helping you anticipate and handle certain adverse driving situations and conditions particular to motorcycles.

This section is divided into four parts:

1. Defensive Driving
2. Adverse Driving Conditions
3. Mechanical Difficulties
4. How to Take a Fall

DEFENSIVE DRIVING

Recent studies tell us riding a motorcycle can kill you four times faster than driving a car. Injuries to motorcyclists run three to one compared to deaths. Thus, it would appear, that chance of injury is twelve times that of driving a car. Most of the time, it's not the motorcyclist's fault. Two out of three motorcycle accidents are caused by auto or truck drivers, who fail to yield the right-of-way. In these accidents, it is almost always the motorcyclist who gets hurt or killed. For these reasons, it is essential for self protection, that the motorcyclist watch and be prepared for the faults of other drivers. **YOU MUST DRIVE DEFENSIVELY.**

To drive defensively, you need **TIME** and **SPACE**.

1. You need **TIME** and **SPACE** to see and to understand what you have seen.
2. You need **TIME** and **SPACE** to decide on, plan for, and start on the best course of action.
3. You need **TIME** and **SPACE** to complete the action.
4. You need **TIME** and **SPACE** to allow for a distraction or a mistake in judgment.

Some defensive driving procedures you should be especially aware of:

1. Watch for the auto or truck driver who may open the street-side door, causing you to come to a sudden stop, or go into a slide and send you flying.
2. Always give the right-of-way to an auto and truck, especially at intersections and if it is turning in front of you.
3. Don't run a yellow light.
4. Don't tail gate.
5. Don't **ASSUME** what the other driver is going to do. **ACT**, only when you **KNOW** what the other driver is doing.

If you plan ahead and train yourself to get the "big picture" (that is,

to be aware of all parked vehicles, pedestrians, road surfaces, and moving traffic around you), you will be better able to anticipate situations and avoid them more effectively.

ADVERSE DRIVING CONDITIONS

In a recent study, adverse road surface and weather conditions were responsible for a large number of motorcycle-involved accidents and particularly those motorcycle fatalities where the motorcyclist was at fault. Thus, the cyclist must be particularly aware of the hazards to operation that different weather and road conditions present and how to compensate for them.

Accordingly this section shall be presented in two parts:

1. Adverse Road Surfaces
2. Adverse Weather Conditions

Adverse Roadway Conditions.

The procedures for handling the following road surfaces and conditions shall be examined:

1. Concrete and Asphalt Surfaces
2. Curves and Hills
3. Potholes
4. Dips in the Road
5. Dirt and Gravel Roads
6. Steel Grated Bridges
7. Railroad Tracks and Other Metal Surfaces
8. Bumps and Obstacles
9. Tunnel Entrances and Exits

After riding on dry concrete on a warm day, you see patches of asphalt ahead in a curve and you cannot safely avoid them. You should:

- ☐ A. Rise off the seat 3-4 inches.
- ☐ B. Lean forward and gently apply the front brake.
- ☐ C. Shift your weight to the rear and accelerate.
- ☐ D. Slow down and proceed in a normal fashion.

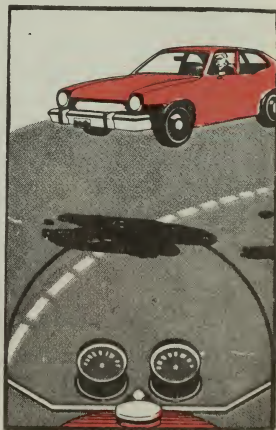
Any change in the road surface constitutes a potential hazard to the

motorcyclist. Even going from cement to a black top may momentarily cause the cyclist some uncertainty.

Another hazard to be conscious of is patches in the roadway; uneven surfaces can cause loss of control of the cycle. In hot weather, the patches can often become soft and slippery and can be especially dangerous when located on a curve. Try to spot these patches early, slow down and proceed normally.

The curve ahead has a gravel road surface that cannot be avoided. The safe cyclist should:

- ☐ A. Lean more than normal in the direction of the curve.
- ☐ B. Lean more than normal away from the direction at the curve.
- ☐ C. Slow down and keep as erect as possible.
- ☐ D. Accelerate through the curve.



Curves and Hills.

Curves and hills are other types of road conditions that should be classified as hazardous because they block your view of oncoming traffic and road surfaces. To minimize these hazards reduce speed until you are sure of conditions ahead.

A particular situation to be aware of is gravel in a curve. If you cannot change your lane position in time to avoid the gravel, slow down, and try to keep as erect as possible without leaning any more than you have to. Be prepared to experience loss of road grip. Steer straight through the gravel, and avoid use of brakes and throttle.

A shower has just let up. You are faced with traveling a road that has many potholes. What particular precaution should you take in light of this situation?

- ☐ A. Slow down and feather the front brake.
- ☐ B. Slow down and steer at an angle through the pothole.
- ☐ C. Avoid use of the brake and throttle and steer straight through the pothole.
- ☐ D. None of the above.



Potholes.

If you are unable to avoid potholes, you should proceed as follows if there is *not* time to brake:

1. Accelerate slightly.
2. Transfer your weight to the rear of the cycle and lift (to keep from going over the handlebars).
3. Hold onto the handlebars tightly. Approach the hole as near to a right angle as possible.
4. If the pothole is deep and the cycle becomes airborne, the rear wheel should touch the pavement first upon landing.

If the potholes cannot be avoided and there is time to brake:

1. Slow down quickly until you reach the hole.
2. Raise up off the seat a few inches with knees bent to act as shock absorbers.
3. Keep your weight toward the rear of the cycle to keep from going over the handlebars.
4. Hold onto the handlebars tightly. Approach the hole as near to a right angle (head-on) as possible and release brakes before hitting it.
5. Accelerate slightly through the hole.

CAUTION:

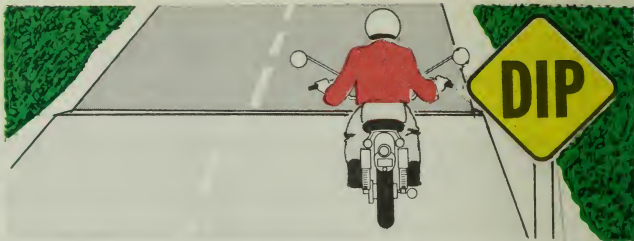
Potholes present an even greater danger after it has rained as puddles form and hide potholes. Steer straight through and avoid the use of brakes and throttle.

A sign indicating a "dip" in the road is ahead. You should:

- ☐ A. Get off your cycle and walk it through the dip (your alignment could otherwise be thrown off).
- ☐ B. Prepare to slow down prior to the dip and transfer your weight to the front of the cycle.
- ☐ C. Prepare to slow down prior to the dip and transfer weight to the rear.
- ☐ D. Prepare to accelerate rapidly for better traction through the dip.

Dips in the Road.

Dips in the road present a serious hazard for the cyclist.



The best way to negotiate dips is:

1. Slow down, if possible, prior to the dip.
2. Transfer weight to the rear.
3. Lean back when hitting the dip.
4. Accelerate slightly through the dip.

You are traveling on dry concrete. The road surface changes to one of dirt and gravel. In adjusting to the change in the road surface, you should:

- ☐ A. Grip your handlebars tightly and slow down gradually.
- ☐ B. Grip your handlebars lightly and alternately apply your front and rear brakes.
- ☐ C. Grip your handlebars tightly and accelerate.
- ☐ D. Rise off the seat of your cycle and transfer your weight to the rear.

Dirt and Gravel Roads.

You should expect that dirt and gravel surfaces will lessen your control over your cycle. By gripping the handlebars tightly, with your



arms reasonably relaxed, you can travel over this type of road safely. Since you will have less traction on the gravel roads, you should keep from accelerating or braking rapidly. This is important when you enter or leave a curve. If you feel that your cycle is drifting when cornering, it is a warning that your speed is too great.

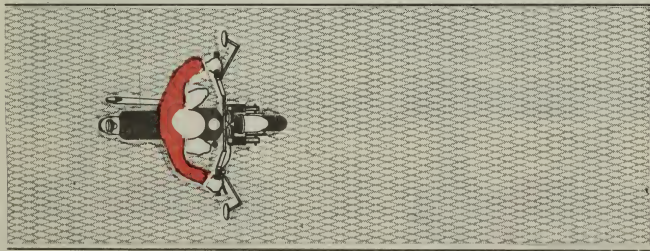
The bridge you are approaching has steel gratings. You start to experience a weaving or wobbly sensation. You should:

- ☐ A. Immediately apply rear brakes.
- ☐ B. Immediately apply front brake.
- ☐ C. Apply rear brake and feather front brake.
- ☐ D. Drift towards the right wheel track and lean correspondingly.

Steel Grated Bridges.

When crossing steel grated bridges your cycle will probably weave slightly. Keep a firm grip on the handlebars and proceed slowly. Remember do not apply front brake by itself. Instead, slow down prior to the steel grating by applying rear brake and feathering front brake.

You should particularly be careful traveling over these bridges during or after a rain. A wet metal grating on a bridge is probably as slick as any surface that the cycle operator will experience.

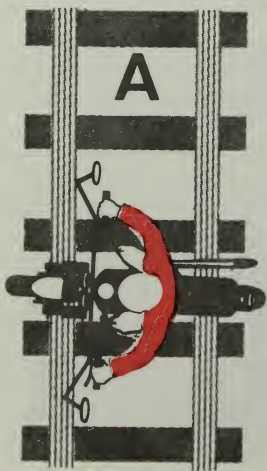
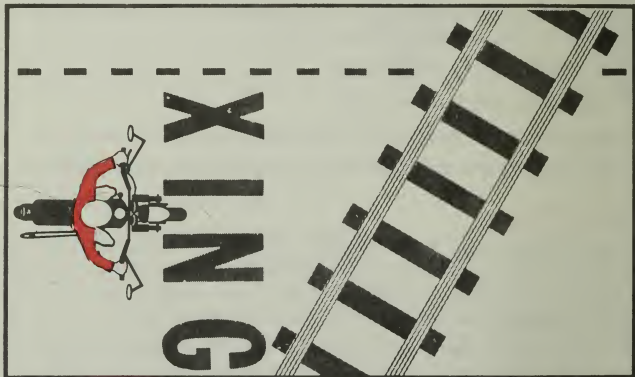


You are approaching an intersection with railroad tracks. You should:

- ☐ A. Move into the right wheel track and cross at a 45 degree angle.
- ☐ B. Drift toward the center of the lane.
- ☐ C. Cross at a 90 degree angle.
- ☐ D. None of the above.

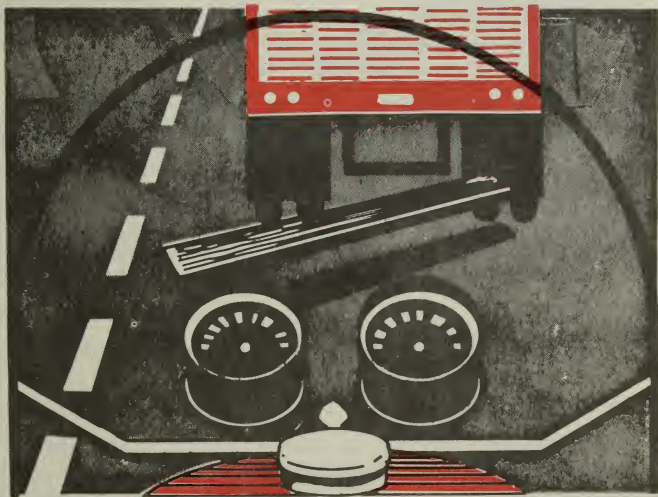
Railroad Tracks and Other Metal Surfaces.

Street car tracks, railroad tracks, and bridge expansion joints should be crossed at a 90 degree angle if possible to avoid skidding or catching the wheels on them. In most cases, the track should be crossed as exhibited in "A", not as in "B".



A plank falls off a truck into your immediate path and you cannot safely avoid it. What should you do?

- ☐ A. Hit the obstacle head on.
- ☐ B. Rise off your seat.
- ☐ C. Apply the front brake.
- ☐ D. Grip the handlebars firmly.



Bumps and Obstacles.

Since all roads are not smoothly paved, you should anticipate encountering various bumps and obstacles in the roadway. If it can be done safely, you should attempt to avoid any obstacles in the roadway. There will be occasions, however, when you cannot safely avoid hitting an obstacle.

While not all obstacles are alike, the general procedures to safely negotiate these hazards are as follows:

1. Hit the obstacle head-on by approaching it at a right angle. If the object is hit at an angle, the front wheel will be twisted and the cycle will be thrown out of control. Thus, the cycle should not be turned away from, but turned toward the obstacle.

2. Grab the handlebars firmly so that the front wheel is not jerked out of control.
3. Rise off the seat for bumps.
4. Hold thighs and knees in close to saddle and gas tank to act as shock absorbers for the body.
5. Speed should be sufficient so that the cycle will continue without much slowing in its original direction.
6. Do not apply brakes, front or rear, while passing through the obstacles. Braking should be done prior to meeting the obstacle.

Tunnel Entrances and Exits.

While most road surfaces in tunnels are in good condition, you should anticipate and adjust accordingly to changes in the road conditions when first entering the tunnel and upon exit from the tunnel.

ADVERSE WEATHER CONDITIONS.

Different and changing weather conditions present special hazards for the motorcyclist. How to adjust to these conditions shall be examined in this section.

Specifically, this section will cover:

1. Warm Weather Driving
2. Slippery Surfaces
3. Snow and Ice Driving
4. Adjusting to Different Types of Wind Conditions

Warm Weather Driving.

On very warm days, the cyclist should be particularly alert for small oil and water spots on the pavement. Warm weather contributes to automatic transmission and radiator leaks from automobiles. You should also pay attention at intersections to puddles formed from air conditioning evaporation from passenger cars. Since most of these puddles occur in the center of the lane, it becomes even more essential that the cyclist ride in the appropriate wheel track of the lane. If for some reason, you cannot steer around an oil or water accumulation, you should steer straight through it, and avoid the use of brakes and throttle.

While riding it begins to rain. You are unable to immediately get off the road. Which of the following precautions should you take?



- ☐ A. Keep your cycle as erect as possible.
- ☐ B. Slow down to adjust to conditions.
- ☐ C. Pump your rear brake.
- ☐ D. A and B.

Slippery Surfaces.

The first fifteen minutes of rain on any road surface is the most dangerous. During this time, the road film is mixed with the rain water, and the road surface is even more slippery than it is after the film is washed away.

To adjust for slippery surfaces, you should:

1. Reduce speed.
2. Keep the motorcycle as erect as possible.
3. Do not attempt sharp turns on slippery surfaces as your road grip is even less than in normal driving conditions.
4. Slow down before starting any turn. The more slippery the surface, the more slowing is needed before turning.

CAUTIONS:

1. The painted lines on the roadway are especially slippery when wet.

2. Manhole covers present a hazardous situation as the condensation coming from under the covers decreases traction.

While riding on wet concrete, your cycle starts to go into a broadside skid.

You should immediately:

- A. Turn the handlebars in the direction of the skid.
- B. Downshift if possible.
- C. Release the brake.
- D. Put your feet down and coast to a stop.

Skids in curves due to slippery surfaces (rain, oil, wet leaves, mud) can be handled if you act fast and properly.

The suggested procedures are:

1. Release the throttle.
2. Do not touch either brake.

A broadside skid can happen if you must brake suddenly and the rear brake becomes locked. The cycle could slide out to the right or left depending on how you are leaning when applying the brakes.

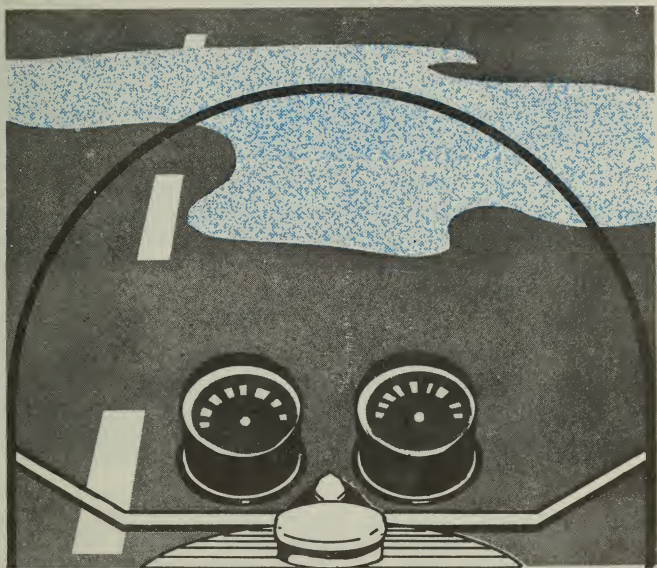
1. Release the brake. This will often allow the cycle to right itself.
2. Apply the brakes quickly, but gently after gaining control.
3. Be ready to place your foot down to stabilize the bike.

You are traveling on an asphalt road. You suddenly hit a patch of ice. You should:

- ☐ A. Apply your front brake and rise off the seat.
- ☐ B. Crouch down in the seat hugging your legs to the gas tank.
- ☐ C. Grasp the handlebars firmly and gradually accelerate.
- ☐ D. Reduce your throttle and do not touch your brakes.

Snow, Sleet, or Ice Driving.

Most cyclists put their machines away for the winter. Snow and ice or sleet on the pavement greatly reduce traction. The experienced cyclists will not even attempt to ride on ice or sleet surfaces. Furthermore, it is almost impossible to see the ice. If the temperature is near freezing and sleet is likely, leave the cycle home.



Sometimes roads are clear, but have small patches of ice on them. Under these conditions, you should always slow down before reaching the patch of ice, then keep speed constant and steer straight ahead until you have crossed over the ice. If you should hit ice, release your throttle and do not brake. A final warning: When spring comes, there will be cinders and sand on the road left over from the winter. This can cause a loss of traction so you should adjust your driving accordingly.

While riding on a country road, a sudden crosswind from your right hits you. To compensate you lean towards your right. What should you do when the wind lets up?

- ☐ A. Return to your original lane position.
- ☐ B. Lean back to an upright position.
- ☐ C. Continue to lean towards your right.
- ☐ D. A and C

ADJUSTING TO WIND CONDITIONS.

Most cyclists avoid riding in heavy winds as they are more fatiguing because you must adjust for sudden jolts and drafts.

If you have occasion to be riding under windy conditions, the following information should be considered in adjusting to different types of winds:

Crosswinds.

These are winds coming at the cyclist from a side direction or at an angle. To compensate, you should lean into the crosswind, but also be prepared to readjust when the crosswind ceases by leaning in the opposite direction until you reach an upright position.

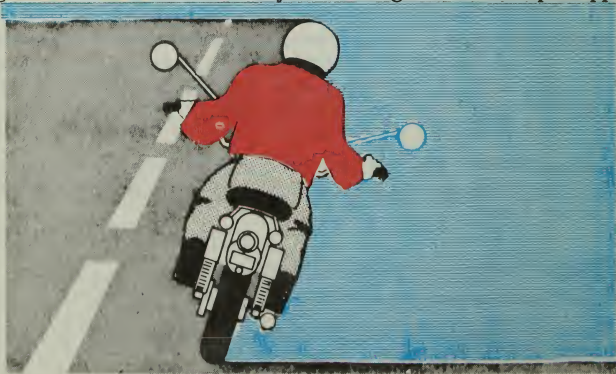
Headwinds.

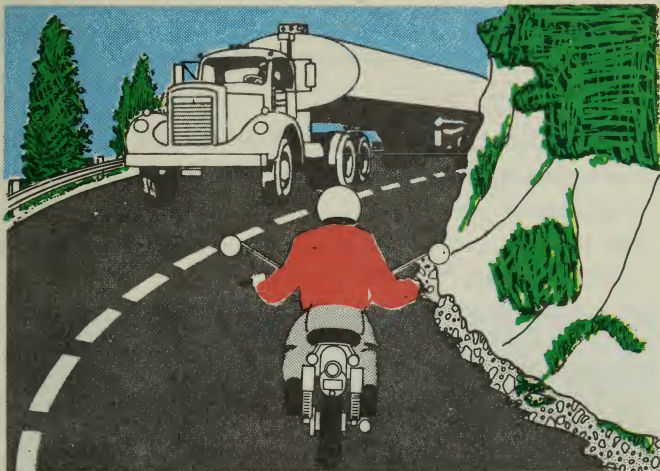
These are winds that you ride into directly. You will find that your power is reduced and that you will tire quickly. You should cut speed and check to see that the cycle doesn't overheat. Under extreme conditions, it may be necessary to lower your head and chest down over the gas tank.

Tailwinds.

These winds are at your back. You will realize that the cycle's engine will require less gas to maintain a given speed. Realizing that tailwinds increase the speed of the cycle, you should watch your speed carefully.

You are rounding a right-hand mountain curve. Coming around the bend is a large semi-trailer. In order to adjust for the gusts created upon approach





and exit of the semi-trailer, you should steer:

- ☐ A. Right upon entrance and left upon exit of the semi-trailer.
- ☐ B. Remain where you are.
- ☐ C. Left upon entrance, right upon exit of the trailer.
- ☐ D. Accelerate through the curve.

Gusts and Blasts.

An oncoming large vehicle can present riding difficulties for cycles, especially if they are approaching the cycle from the opposite direction at high speeds. The gusts or blasts produced can cause a cyclist to lose control. Therefore, upon approach of another vehicle from the opposite direction, you should slow down and move from the left wheel track to the right, and upon passing by or exit of the large vehicle steer back to the left wheel track (i.e., right upon entrance and left upon exit of the gust caused by the passing truck).

Vacuums Created by Trucks.

When an oncoming truck or other large vehicle passes a car from the rear, there is a "pull" created by the vacuum behind the truck. When the truck comes toward you, it is preceded by a "push" of air. No specific

skills are required other than the cyclist must be aware of the situation and not overreact in panic and perhaps swerve into another vehicle.

MECHANICAL FAILURES

Mechanical failures present a real accident hazard to the cyclist.

In this section the following mechanical difficulties will be examined:

1. Tire Blowout
2. Wet Brakes
3. Throttle Stickness



All of a sudden your front tire blows out while you have a passenger aboard. You should:

- ☐ A. Transfer weight to the center of the saddle.
- ☐ B. Apply the rear brake.
- ☐ C. Put your feet down and coast to a stop.
- ☐ D. All of the above.

Tire Blowout.

How you handle a blowout depends on whether you are operating the

cycle alone or with a passenger, and whether it is the front or rear wheel that blows out.

FRONT WHEEL BLOWOUT

SOLO

1. Transfer weight to rear
2. Apply rear brake gently.
3. As you slow, put both feet down and coast to a stop.

REAR WHEEL BLOWOUT

1. Transfer weight to rear.
2. Apply front brake gently.
3. As you slow, put both feet down and coast to a stop.

PASSENGER ABOARD

1. Transfer weight to center of saddle.
2. Apply rear brake gently.
3. As you slow, put both feet down and coast to a stop.

1. Transfer weight to center of saddle.
2. Apply front brake gently.
3. As you slow, put both feet down and coast to a stop.

Wet Brakes.

This condition will frequently happen in the rain or after going through a deep puddle. You should always test your brakes when you think they might be wet. To dry your brakes, apply them gently until they heat up and respond.

Throttle Stickage.

A sticking throttle can be a very dangerous situation. There are a number of reasons why throttles stick, and it should be noted that they sometimes stick at FULL THROTTLE.

Careful maintenance, including periodic inspection of the throttle cable, lubrication to reduce cable wear, tightening of the carburetor cap, and thorough maintenance by a qualified mechanic at your cycle dealer can lessen the chances of throttle stickage.

But if your throttle does stick:

1. Hold the kill button on, if you have one.
2. Do not gear down; instead, brake quickly to stall your engine.
3. Turn the key off as a last resort.

ANIMALS

You must be constantly alert for animals that may dart out from between parked cars or from behind other obstacles. If you suddenly swerve or slam on your brakes, you may collide with another vehicle. Unfortunately, the safest alternative may be hitting the animal.

ALCOHOL

As a motorcycle operator, you must remember that alcohol greatly affects your sense of balance. If you get into an accident, you are the one most likely to be injured or killed.

HOW TO TAKE A FALL

Occasionally you will fall. The question now is, "How do we fall in the safest possible way?"

You are riding and lose control, what then? The cardinal rule is "Do not try to continue riding an out-of-control cycle."

If you find your machine going out of control in a skid or slide, take a lesson from track racers who learned long ago to "lay it (the motorcycle) down" on the rearward side. By clinging tightly to the handlebars, let the cycle settle to the ground; the chances are good that no serious injury will result. The hardest fall you can take is the one where you are flipped forward over the cycle and onto the road.

If you anticipate a collision, slow down if possible and move your cycle to the right to avoid a head-on collision. If it becomes apparent that an automobile is going to strike the side of your motorcycle, jerk your leg out of the impact area.

In the event you are unable to "lay it down" and have to bail off, tuck in your head, arms, and legs and roll like a gymnast.

NOTES

